

**REMARKS****I.     Status of the Application**

Claims 14-33 are pending in this application. In the March 1, 2007 office action, the Examiner:

- A.     Rejected claims 22-25 and 33 as being anticipated under 35 U.S.C. § 102(b) by US 6,519,165 to Koike;
- B.     Rejected claims 14-16 and 26-29 as being obvious and unpatentable under 35 U.S.C. § 103 over US 6,563,710 to Kitano;
- C.     Rejected claims 18, 19, 31 and 32 as being obvious and unpatentable under 35 U.S.C. § 103 over Kitano and further in view of Koike;
- D.     Rejected claim 20 as being obvious and unpatentable under 35 U.S.C. § 103 over Kitano and Koike and further in view of US 6,271,707 to DiTommaso; and
- E.     Allowed claim 21.

The allowance of claim 21 is gratefully acknowledged. In this response, applicant has amended claims 14, 22, 26 and 33. The applicant has also added a new claim 34, which is based on previous claim 21 including the limitations of the base claim and all intervening claims. Furthermore, as set forth below, applicant respectfully traverses the examiner's rejection of claims 14-20 and 22-33.

**II. The Rejections of Claims 22-25 and 33 Under 35 U.S.C. § 102(e) Should Be Withdrawn**

To establish a *prima facie* case of anticipation, the examiner must show that each and every element as set forth in the claim is found either expressly or inherently in a single prior art reference. M.P.E.P. § 2131.

In the March 1, 2007 office action, the Examiner rejected claims 22-25 and 33 under 35 U.S.C. 102 (e), as allegedly being anticipated by U.S. Patent No. 6,519,165 to Koike ("Koike"). In particular, the Examiner considers Koike to disclose or teach all of the features of claims 22-25 and 33 of the present application. Applicant respectfully traverses these rejections. Applicant submits that each and every element as set forth in claims 22-25 and 33 is not found, either expressly or inherently, in Koike. Thus, the cited reference does not anticipate the claimed invention. Claims 22 and 33 are to be amended to add further limitations not found in Koike. In view of these amendments, the rejection over Koike is moot.

Claim 33 now requires, *inter alia*:

receiving a first signal indicative of the current through the primary of the transformer;  
limiting the current pulses if the signal indicates that the current is above a threshold value and if the power supply is operating in a burst mode of a plurality of power supply modes

Claim 22 requires similar limitations to the foregoing limitations of claim 33. In contrast, Koike discloses two quite separate control regimes. Firstly there is an over current protection system. The over current protection system overrides all other control to limit the current to safe levels. Then quite independently there is a mode control, which selects between normal mode and standby mode. It appears the standby mode is provided with a lower frequency than normal mode. That is to say Koike corresponds the frequency reduction type device mentioned on page 2 lines 16-24 of the background section of the present specification and accordingly does not employ a "burst mode" type standby mode.

Therefore Koike does not disclose:

1. a burst mode,
2. a burst mode current threshold, and

3. . . a current limiting circuit which limits the current according to the burst mode and the burst mode threshold value.

For at least the reasons provided above, Koike does not teach the required elements of claim 22 or 33. Accordingly, claims 22 and 33 are patentable over Koike.

Claims 23-25 depend from claim 22 and add further limitations thereto. The submissions above in relation to claim 22 are repeated in relation to the patentability of claims 23-25. It is respectfully submitted that these dependent claims are allowable by reason of depending from an allowable claim as well for adding new limitations.

### **III. The Rejections of Claims 14-20 and 26-32 Under 35 U.S.C. 103(a) Should Be Withdrawn**

To establish a *prima facie* case of obviousness, the examiner must satisfy three basic criteria under M.P.E.P. § 2143. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to a reader of ordinary skill in the art, as at the date of invention, to modify the reference or to combine the reference teachings. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Second there must be a reasonable expectation of success. Finally the prior art references when combined must teach or suggest all of the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable chance of success must both be found in the prior art, not in the applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cu. 1991).

#### **A. Claims 14-20 and 26-32**

In the March 1, 2007 office action, the examiner rejected claims 14-16 and 26-29 under 35 U.S.C. 103 (a), as allegedly being unpatentable over U.S. Patent No. 6,563,720 to Kitano ("Kitano"). Applicant respectfully traverses these rejections. The cited reference does not render obvious the claimed invention. Independent claims 14 and 26 are to be amended to include further limitations not found in Kitano. In view of these amendments, the rejection over Kitano is moot.

Claim 14 now requires, *inter alia*:

... control unit further configured to receive a signal related to power drawn by a load from a secondary side of the transformer and the first comparator configured to compare the signal with a first threshold level ...

the second comparator configured to compare the signal with a second threshold level, the two threshold levels defining a range ...

the control unit configured to enable switching of the transistor in the case that a characteristic of the signal is outside the range in a first direction, and disabling switching of the transistor in the case that the characteristic of the signal is outside the range in a second direction.

Claim 26 includes limitations similar to those of claim 14.

The examiner admits at page 4 lines 15 to 17 of the March 30, 2005 Office action that Kitano does not teach "the control unit further configured to compare the signal (from the secondary side) with two threshold levels defining a range." The examiner goes on to state on page 6 lines 1 to 6 that "The invention as claimed would have been obvious to one if ordinary skill in the art at the time of the invention to send the signal from the secondary side of the transformer back to the primary side of the transformer for the sake of compacting all control components onto a single side of the transformer making it possible to cut down the total number of parts necessary and even perhaps enabling all converter controls to be placed on a single circuit board".

The above rationale for obviousness stated by the examiner seems to suggest the only missing limitation not found in Kitano has something to do with physical location. Applicant respectfully traverses the examiner's stated rationale. Applicant respectfully requests clarification concerning the examiner's obviousness assertion. For example, where in the art is there a suggestion or motivation for modifying Kitano as suggested by the examiner? Without such clear suggestion, motivation or other clearly defined basis, the examiner's stated rationale appears to be impermissible "hindsight".

Notwithstanding the foregoing, there are numerous limitations not taught or suggested in Kitano as discussed below, and which the examiner has not identified in the art.

Kitano discloses system which determines light loading using fluctuation detection. When light loading is determined it enters standby mode. Kitano also refers to a prior art system

in col. 1-2 and Figure 8, which requires a control line connection to the load apparatus to receive a control signal to enter standby mode.

Applicant respectfully disagrees with the examiners interpretation of the portion at col. 2 lines 13-44 of Kitano. Applicant interprets Kitano to teach that the prior art in Figure 8 in normal mode, controls the switching element q by simply comparing the output voltage to a reference voltage level. The system enters standby mode when a standby signal is received from the load apparatus via control input terminal 14. In standby mode the switching element q is controlled to "intermittently turn on and off" according to comparators 12 and 13. In any event the two comparators 12 and 13 are comparing two different voltages against a single threshold (reference voltage source 10).

Consequently Kitano does not disclose:

1. a signal related to power drawn by the load, (this is expressly disclaimed and voltage is not usually equivalent to power in any case);
2. two comparators comparing the power drawn by the load to two different thresholds; and
3. switching of the transistor depending on the power drawn by the load relative to the two threshold levels (by contrast, in Kitano standby mode is entered either by the control signal from the load apparatus or the fluctuation detection).

For at least the reasons discussed above, Kitano does not teach the required elements of claim 14 or 26. Accordingly it is respectfully submitted that claims 14 and 26 are patentable over Kitano.

Claims 15-20 depend from claim 14 and claims 27-32 depend from claim 26. Therefore, claims 15-20 and 27-32 are patentable for at least the same reasons as claims 14 and 26. It is respectfully submitted that these dependent claims are allowable by reason of depending from an allowable claim. However, claims 15-20 and 27-32 add further limitations which provide additional reasons for patentability. Examples of such additional limitations are set forth below under headings B-D.

#### B. Claims 17 and 30

In the March 1, 2007 office action, the examiner rejected claims 17 and 30 under 35 U.S.C. 103 (a) as allegedly being unpatentable over Kitano in view of U.S. Patent No. 5,297,014 to Saito et al. ("Saito"). Applicant respectfully traverses these rejections. First, independent

claims 14 and 26, from which 17 and 30 depend, have been amended to include further limitations not found in Kitano or Saito. In view of these amendments, the rejection over Kitano and Saito is moot. Second, claims 17 and 30 also add further limitations thereto. Thus, it is respectfully submitted that claims 17 and 30 is allowable by reason of depending from an allowable claim as well as for adding new limitations.

The examiner admits at page 8 lines 1 to 4 that Kitano does not teach "a blanking window definition circuit configured to prevent the control unit from disabling switching of the transistor in the case that the signal is below the second threshold value for less than a preset period of time". The examiner goes on to state at page 8 lines 5 to 10 that Saito teaches at col. 4 lines 59 to col. 5 line 7 the missing feature.

Applicant respectfully disagrees with the examiner's interpretation of the portion at col. 4 lines 59 to col. 5 line 7 of Saito. In particular, the system described in Saito merely overrides the overcurrent protection according to the delay circuit 8. Applicant finds no disclosure in Saito of "preventing the control unit from disabling switching of the transistor in the case that the signal is below the second lower threshold value for less than a preset period of time" as set forth in claim 30. A similar limitation is set forth in claim 17. In view of the foregoing, neither Kitano nor Saito teach or suggest all of the limitations of claims 17 and 30.

C. Claims 18, 19, 31 and 32.

In the March 1, 2007 office action, the examiner rejected claims 18, 19, 31 and 32 under 35 U.S.C. 103 (a), as allegedly being unpatentable over Kitano in view of Koike. Applicant respectfully traverses these rejections, as the cited references do not render obvious the claimed invention. First, independent claims 14 and 26, from which claims 18, 19, 31 and 32 depend, have been amended to include further limitations not found in Kitano or Koike. In view of these amendments, the rejection over Kitano and Koike is moot. Second, claims 18, 19, 31 and 32 also add further limitations thereto. Thus, it is respectfully submitted that claims 18, 19, 31 and 32 is allowable by reason of depending from an allowable claim as well as for adding new limitations.

The examiner admits at page 9 lines 18 to 21 and page 10 lines 20 to 22 that Kitano does not teach various features of claims 18 and 31. The examiner goes on to state at page 10 lines 1 to 19 and page 11 lines 1 to 15 that Koike teaches at col. 6 lines 33-49 and col. 7 lines 43-57 the

missing features of claims 18, 19, 31 and 32. Applicant respectfully disagrees with the examiners interpretation of the portions of Koike. Furthermore applicant disagrees that there is any motivation to combine Kitano and Koike.

Applicant notes that neither Kitano nor the cited portion of Koike teach a burst mode type standby mode. Neither reference would suggest a problem to be solved with burst mode type standby mode SMPS. Therefore, applicant finds no evidence of any motivation to combine Kitano and Koike in the manner suggested by the examiner. In fact, it is respectfully submitted that the two type of control system in Kitano and Koike are not interchangeable. It is not feasible to simply take one feature in one system and insert it into the other. There is no evidence that an artisan of ordinary skill in the art would even find it obvious to try such a combination, let alone the required stand of a reasonable expectation of success. Should the examiner maintain the rejection of claims 18, 19, 31 and 32, applicant respectfully requests clarification from the examiner concerning a motivation to combine Kitano and Koike as well as proof of a reasonable expectation of success when combining these two references.

#### D. Claim 20

In the March 1, 2007 office action, the examiner rejected claim 20 under 35 U.S.C. 103(a) as allegedly being unpatentable over Kitano and Koike and further in view of U.S. Patent No. 6,271,701 to DiTommaso. The examiner referred to DiTommaso as U.S. Patent No. 6,271,707 which appears to be an error. More specifically, the Examiner has objected to claim 20 as he considers this claim to be obvious in light of a combination of the teachings of Kitano, Koike and DiTommaso.

Applicant respectfully traverses the rejection of claim 20, as the cited references do not render obvious the claimed invention. Applicant has amended independent claim 14 to include further limitations not found in Kitano, Koike or DiTommaso. In view of these amendments, the rejection over Kitano, Koike and DiTommaso is moot. Moreover, Claim 20 also adds further limitations to those of claim 14. It is respectfully submitted that claim 20 is allowable by reason of depending from an allowable claim as well as for additional limitations.

DiTommaso does not teach or suggest the limitations of 20 missing from Kitano or Koike, nor in any event is it there a valid motivation to combine the citations in the way suggested or a reasonable expectation of success.

The examiner admits at page 11 lines 21 to 22 that Kitano and Koike do not teach all the limitations of claim 20. The examiner goes on to state at page 12 lines 1 to 7 that DiTommaso teaches at Figure 1 the limitations of claim 20. Applicant respectfully disagrees with the examiners interpretation of Figure of DiTommaso.

The examiner appears to state that the use of flip flops is well known. While the accuracy of this statement is not admitted by the applicant, if it were true then this knowledge would have been available to Kitano/Koike in 2001/2000 when developing their inventions. Therefore by the examiners logic, the fact that Kitano/Koike doesn't include this feature is *prima facie* evidence the combination is not valid as at the date of invention.

Kitano, Koike, DiTommaso or any valid combination thereof, do not teach or suggest a SMPS having the required limitations of claim 20. Accordingly claim 20 is patentable over Kitano and Koike and further in view of DiTommaso.

**IV. Conclusion**

For all of the foregoing reasons, it is respectfully submitted the applicant has made a patentable contribution to the art. Favorable reconsideration and allowance of this application, including claims 14-20 and 22-34 is therefore respectfully requested.

Applicant has included a check in the amount of \$370.00 for new independent claim 34 (\$250.00) and the enclosed petition for a one month extension of time to respond to the March 1, 2007 Office Action (\$120.00). However, in the event applicant has inadvertently overlooked the need for an extension of time or payment of an additional fee, the applicant conditionally petitions therefore, and authorizes any fee deficiency to be charged to deposit account 13-0014.

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Respectfully submitted,



Russell E. Fowler II  
Attorney for Applicants  
Attorney Registration No. 43,615  
Maginot Moore & Beck  
Chase Tower  
111 Monument Circle, Suite 3250  
Indianapolis, Indiana 46204-5109  
Telephone: (317) 638-2922